CLAIMS

1. A compound comprising a target cell-specific portion and human NAD(P)H:quinone reductase 2 (NQO2) or a variant or fragment or fusion or derivative thereof which has substantially the same activity as NQO2 towards a given prodrug, or a polynucleotide encoding said NQO2 or said variant or fragment or fusion or derivative.

2. A compound according to Claim 1 comprising a target cell-specific portion and human NAD(P)H:quinone reductase 2 (NQO2).

3. A compound according to Claim 1 or 2 wherein the target cell-specific portion is tumour cell-specific.

4. A compound according to any one of Claims 1 to 3 wherein the target cell-specific portion comprises an antibody or fragment or derivative.

5. A compound according to any one of Claims 1 to 4 wherein the human NAD(P)H:quinone reductase 2 (NQO2) or a variant or fragment or fusion or derivative thereof is located substantially inside or following expression of the polynucleotide is located substantially inside the target cell.

6. A compound according to any one of Claims 1 to 5 comprising means for delivering said polynucleotide to said target cell.

7. A recombinant polynucleotide comprising a target cell-specific promoter operably linked to a polynucleotide encoding human NAD(P)H:quinone reductase 2 (NQO2) or a variant or fragment or fusion or derivative thereof which has substantially the same activity as NQO2 towards a given prodrug.

8. A recombinant polynucleotide according to Claim 7 wherein said promoter is tumour cell-specific.

9. A recombinant polynucleotide according to Claim 7 or 8 comprising a polynucleotide encoding NQO2.

10. A recombinant polynucleotide according to any one of Claims 7 to 9 wherein following expression in the target cell the NQO2 or a variant or fragment or fusion or derivative thereof is located substantially inside the target cell.

11. A compound according to any one of Claims 1 to 6 wherein said polynucleotide is the recombinant polynucleotide of any one of Claims 7 to 10.

12. A therapeutic system comprising a compound according to any one of Claims 1 to 6 or 11, or a polynucleotide according to any one of Claims 7 to 10 and a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2.

13. A system according to Claim 12 wherein the prodrug is CB 1954 or an analogue thereof.

14. A system according to Claim 13 wherein the prodrug is CB 1954.

15. A system according to any one of Claims 12 to 14 further comprising a cosubstrate for NQO2.

16. A system according to Claim 15 wherein the cosubstrate is nicotinamide riboside (reduced) (NRH) or an analogue thereof which can pass reducing equivalents to NQO2.

17. A method of treating a patient with a target cell to be destroyed the method comprising (a) administering to the patient a compound according to any one of Claims 1 to 6 or 11, or a recombinant polynucleotide according to any one of Claims 7 to 10; (b) allowing the NQO2 or a variant or fragment or fusion or derivative thereof to localize at, or be expressed in, the target cell; and (c) administering a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2.

18. A method according to Claim 17 wherein the patient has a tumour to be treated.

19. A method according to Claim 17 or 18 wherein the prodrug is CB 1954 or an analogue thereof.

20. A method according to Claim 19 wherein the prodrug is CB 1954.

21. A method according to any one of Claims 17 to 20 the method further comprising administering to the patient a cosubstrate for NQO2.

22. A method according to Claim 21 wherein the cosubstrate is nicotinamide riboside (reduced) (NRH) or an analogue thereof which can pass reducing equivalents to NQO2.

23. A compound according to any one of Claims 1 to 6 or 11, or a recombinant polynucleotide according to any one of Claims 7 to 10, for use in medicine.

24. Use of a compound according to any one of Claims 1 to 6 or 11, or a recombinant polynucleotide according to any one of Claims 7 to 10, in the manufacture of a medicament for treating a patient with a target cell to be destroyed.

25. Use as defined in Claim 24 wherein the patient has been, is being or will be administered a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2.

26. Use of a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2 in the manufacture of a medicament for treating a patient with a target cell to be destroyed wherein the patient has been, is being or will be administered a compound

according to any one of Claims 1 to 6 or 11, or a recombinant polynucleotide according to any one of Claims 7 to 10.

27. Use as defined in Claim 26 wherein the patient has a tumour to be treated.

28. A method of treating a human patient with a target cell to be destroyed wherein the target cell expresses NQO2 the method comprising administering to the patient a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2 and nicotinamide riboside (reduced) (NRH) or an analogue thereof which can pass reducing equivalents to NQO2.

29. A method according to Claim 28 wherein the cytotoxic drug is CB 1954 or an analogue thereof.

30. A method according to Claim 28 or 29 wherein the analogue of NRH is able to permeate the target cell membrane.

31. A method according to any one of Claims 28 to 30 wherein the target cell is a tumour.

32. A method according to any one of Claims 28 to 31 the method further comprising determining, before administering the prodrug or NRH or an analogue thereof, whether the target cell to be treated expresses NQO2.

33. A therapeutic system comprising a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2 and nicotinamide riboside (reduced) (NRH) or an analogue thereof which can pass reducing equivalents to NQO2.

34. Nicotinamide riboside (reduced) (NRH) or an analogue thereof which can pass reducing equivalents to NQO2 for use in medicine.

35. Use of nicotinamide riboside (reduced) (NRH) or an analogue thereof which can pass reducing equivalents to NQO2 in the manufacture of a medicament for treating a human patient with a target cell to be destroyed.

36. Use as defined in Claim 35 wherein the patient has been, is being or will be administered a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2.

37. Use of a prodrug which is converted to a substantially cytotoxic drug by the action of NQO2 in the manufacture of a medicament for treating a human patient with a target cell to be destroyed wherein the patient has been, is being or will be administered NRH or an analogue thereof which can pass reducing equivalents to NQO2.

38. A kit of parts comprising a means for determining whether a target cell to be treated expresses NQO2 and NRH or an analogue thereof which can pass reducing equivalents to NQO2.

39. Any novel method of treating cancer as herein disclosed.